THE WILLIAM DAVIDSON INSTITUTE
AT THE UNIVERSITY OF MICHIGAN BUSINESS SCHOOL

Inflation Targeting, Between Rhetoric and Reality. The Case of Transition Economies

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William Davidson Institute Working Paper Number 743
January 2005

Inflation Targeting, Between Rhetoric and Reality. The Case of Transition Economies[1]

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Abstract: The paper examines the inflation targeting regime in the context of transition economies. Recent years have witnessed an increasing number of central banks in these countries moving towards the implementation of inflation targeting regimes. However, the success of such a regime depends largely on the degree to which certain general requirements are met. As experience in a number of transition economies has shown so far, targeting inflation is not an easy task. The ongoing restructuring process in these economies makes the inflation forecasting process more difficult and introduces an additional source of uncertainty in the system. By unequivocally choosing inflation as a nominal anchor the central banks could face potential dilemmas if, for example, exchange rate appreciated too much under the pressure of massive capital inflows. The paper presents the broad framework in which inflation targeting could operate efficiently and attempts to assess the extent to which such a regime, when applied to transition economies, could fit into this framework.

Keywords: Inflation Targeting, Eastern Europe

JEL Classification: E52, E60.

[1] This paper is work in progress within the framework of a project sponsored by the UN/ECE; it draws on a previous research undertaken by Daniel Daianu, Laurian Lungu and Radu Vranceanu (2004). We thank Naveen Srinivasan for helpful comments. The paper benefited also on the discussions Daniel Daianu had with the former governor of the National Bank of Hungary, Gyorgy Suranyi, Thomas Reininger, from the National Bank of Austria, and Max Watson, previously with the IMF. We bear sole responsibility for the views expressed herein.

1. Introduction

In recent years a number of central banks have adopted inflation targeting (IT) as a monetary policy regime. There is now is a large literature that deals with IT; see among others, Bernanke et al. (1999), Taylor (1999), Truman (2003). The move towards IT started in the 1980's, after the period of high inflation caused by the oil shocks. The inflation adversity that prevailed during that period made monetary institutions to voice their strong commitment in fighting inflation. Recent developments in economic theory strengthened the case for switching towards IT. The basic macroeconomic framework of the New Neoclassical Synthesis (Goodfriend and King, 1997) has provided a theoretical foundation for models employed in monetary policy analysis. These models seem to suggest that a central bank (CB) should pursue an activist policy to target inflation. It has to be said however, that it is too early to judge how well the IT framework is working. The rationale for IT is essentially a long-term one and the inflation targeters' experience is too limited yet in order to provide a definite assessment of its success or failure.

In a comprehensive study, Mishkin and Schmidt-Hebbel (2001) argue that inflation targeting proved to be in general a successful policy. The authors claim that IT reinforced accountability, credibility, resilience to external shocks and helped high inflation countries to reduce inflation to normal levels (most of them were emerging economies). Yet they point that, at the end of the process, inflation in IT countries is not lower than in non-IT countries. Along the same lines Ball and Sheridan (2004) show that, once corrected for the initial conditions, the differences between inflation targeters and non-targeters are minor. Fraga, Goldfajn and Minella (2003) also argue that average inflation in both emerging and developed economies fell after the adoption of IT. Other authors such as Friedman (2004) contend that IT, as practiced in reality in the low inflation countries, actually obscures the communication of the central bank's goals. Moreover, Friedman (2004) argues that this monetary policy framework is not as transparent as claimed by most IT advocates, casting doubts on the benefits brought about by the adoption of IT.

The paper examines the inflation targeting regime in the context of transition economies. The success of such a regime depends largely on the degree to which certain general

requirements are met. As experience in a number of transition economies has shown so far, targeting inflation is not an easy task. The ongoing restructuring process in these economies makes the inflation forecasting process more difficult and introduces an additional source of uncertainty in the system. By unequivocally choosing inflation as a nominal anchor the central banks could face potential dilemmas if, for example, exchange rate appreciated too much following capital inflows. The idea of the paper is to present the broad framework in which inflation targeting could operate efficiently and provide an assessment of the extent to which such a regime, when applied to transition economies, could fit into this framework.

The structure of the paper is as follows. Section 2 describes the basics of the IT concept and mentions several requirements that are a prerequisite for its successful implementation in practice. Section 3 outlines the European context of monetary policy management. Section 4 addresses several issues regarding the implementation of the IT regime in transition economies and provides a brief account about IT experience in three transition economies, the Czech Republic, Hungary and Poland. Section 5 concludes.

2. Inflation Targeting: Theory and Policy

Historically, to achieve their main objectives (most often, low inflation and, eventually, sustained growth) numerous central banks targeted some intermediate variable, such as a monetary aggregate or the exchange rate. Success with this method requires that (a) the central bank were able to control the intermediate variable and (b) that there is a stable relationship between the intermediate target variable and the ultimate objectives. For instance, it was sometimes claimed that the Bundesbank and Swiss National Bank outstanding record of low inflation should be accounted for by their policy of targeting a monetary aggregate (monetary targeting). Other scholars underlined that in deeds the Bundesbank set more emphasis on inflation forecasts than on the monetary aggregate, and also that the SNB was concerned with many other indicators (Gerlach and Svensson, 2003).

In recent years, several governments in developed and developing countries decided to implement “inflation targeting” (IT). Pioneers were New Zealand (1990), Canada (1991), Chile (1991), Israel (1992), United Kingdom (1992), Australia (1993) and Sweden (1993). In Eastern

Europe, the Czech Republic, Poland and Hungary claim to have adopted this system (after 1998). Under the IT system, the central bank manages monetary policy instruments with the direct goal of *containing inflation over the medium run*. In this setup, inflation becomes the overriding goal of monetary policy. All the other indicators (output gap, money stock growth, the exchange rate, etc) become auxiliary variables; the central bank will take them into account only if this information helps it to improve its inflation forecast.

Experience with monetary policy management in the developed countries has shown that the impact of monetary policy changes on inflation works its effects with a significant lag (at least nine months, and up to two years for a full impact). To make things simple, when central bankers undertake a change in the main instrument at time t, the effects on inflation will be felt much later (let say, after 6 quarters, that is at time t+6). Therefore, if the central bank wants to achieve a quantitative inflation target, it must act in a forward-looking manner, that is must decide today on ground on a reasonable forecast of inflation at time $t+x$ (x being the number of quarters in the forecast). In Svensson's (1997) terminology, inflation targeting should be interpreted as "inflation forecast targeting". As Svensson (1997) mentioned, if the central banker is competent, the inflation forecast will be highly correlated with actual future inflation (which is unknown to the policymaker at the time of decision).

It should be emphasised that under IT, inflation forecasts are *contingent* upon the central bank view on the transmission mechanism, the current state of the economy and a planned path for the instrument. Complex econometric modelling and statistical inference building on high quality data and economic information is needed in order to produce reliable forecasts (a subjective assessment of the inflation path may be included too). The forecast quality varies much from one central bank to another, in keeping with their expertise, experience with forecasting, and available data. No doubt that the better the forecast precision, the better will be the public image of the central banker.

In theory, the instrument planned path *might be seen as the solution to a dynamic programming problem*, where the bank has to find the instrument path that brings inflation close to the target while minimizing output volatility over the chosen time horizon (Svensson, 1999;

2000). In practice, the Bank might follow some simple decision rule consistent with its medium run objectives. The parameters of the rule depend on the quality of the forecast.

In Figure 2.1. we describe how a central banker takes its decision under the IT policy regime. At date *t*, the policymaker must decide on the instrument (interest rate). He knows the previous inflation path and, given its knowledge of the economy, has an idea of the future path for inflation. The *conditional* forecast on the inflation rate π, calculated for *x* quarters ahead is denoted by $E(\pi_{t+x}|I_t)$, where I_t is the information set available at the date of the forecast. Notice that the initial forecast is obtained for an unchanged instrument (and that a change in the instrument would allow to obtain a different forecast).

Figure 1 describes a situation where although at time *t* the inflation rate falls below the target, in the medium run (8 quarters ahead), the inflation forecast, obtained for a constant instrument value, exceeds the target. In this case, the policymaker must tighten its monetary policy (although at time *t* inflation is below the target).

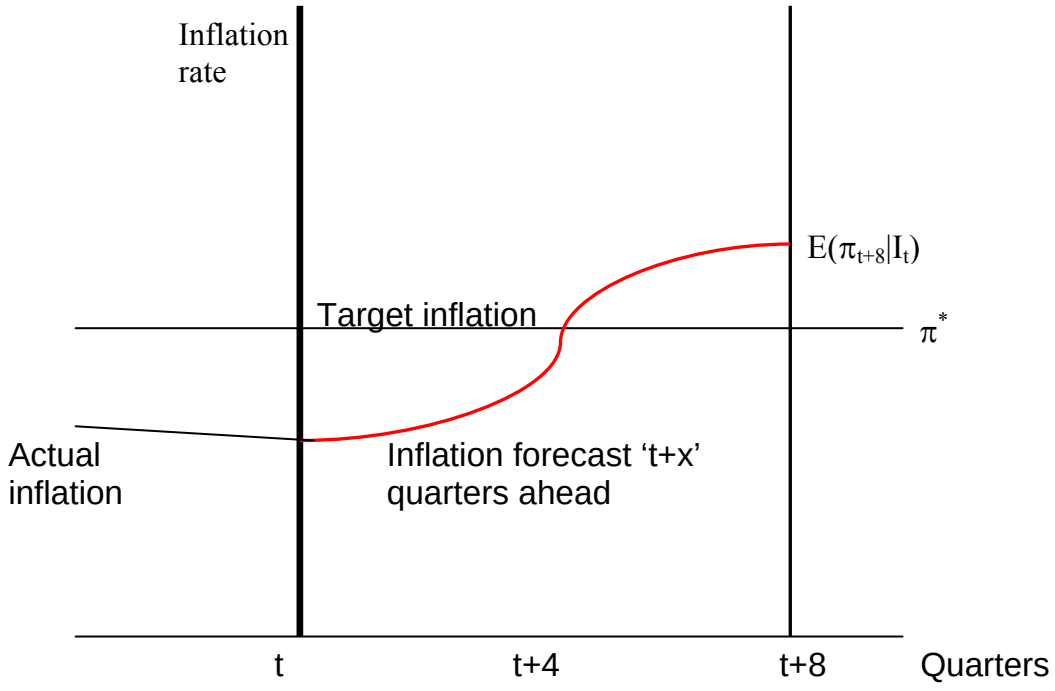

Figure 1. IT – the basic logic

From this simple (hypothetical) example, it can be seen how important is for the policymaker to dispose of reliable forecasts. A reliable forecast implies that over a long period the average forecast error must be zero and the variance of the forecast error must be as low as possible. Obviously, such a forecast can be obtained only if the policymaker has a good knowledge of the monetary transmission mechanism, and of the economy as a whole.

If the central bank model (or models) is (are) correct (on average) and if the central bank communicates extensively on the forecasting method, private agents may form better inflation expectations under this policy regime. It goes without saying that, if the central bank communicates by using a wrong model, its ex post credibility would be adversely affected, given that no private agent can trust an unreliable policymaker.

From the implementation point of view, a basic prerequisite for inflation targeting is the central bank's full *autonomy* and *independence*. In particular, the Central Bank should be endowed with powerful *policy instruments* and granted full control over these instruments. Furthermore, political influence over the Central Bank should be irrevocably suppressed.

Then inflation targeting needs to define the *relevant price index*; in general, it is a traditional consumer price index. In the Euro-area, the relevant index is the Harmonized Consumer Price Index (HCPI). Countries that adopt IT will next have to choose *a target and a band*; for instance, for a long period the UK aimed at the 2.5% central value within the 1% to 4% band; in Canada, New Zealand and Sweden the bands are respectively 1-3%, 0-2% and 1-3%. The bank has then to decide on the instruments it wants to use. In the last years, CBs all over the world choose to have a say on short term interest rates, mainly through reverse-repo operations carried out in the money market. Thus, the basic instrument is some repo-refinancing interest rate. At regular intervals the CB will adjust the main instrument (the interest rate) so as to bring the inflation forecast (over 6 to 8 quarters) as close as possible to the target.

A few influential economists are enthusiastic about this monetary policy framework (see e.g. Bernanke and Mishkin, 1997; Bernanke 2003). They argue that such a policy regime allows ruling out the inflation bias connected with time inconsistency. The policymaker's accountability

should be quite high under IT since his performance can be directly measured, for instance by the deviation between actual inflation and the target. Transparency is taken a step further since the forecasting method (econometric model) is made available to the public. In general, IT central banks communicate very much on their policy and forecasting methods. This helps private agents to obtain better inflation expectations, which should entail lower economic fluctuations.

Although most inflation targeters share some of the features mentioned above, in practice there is considerable variation in the specifics (for a characterisation of IT see for example Kuttner, 2004). In practice, central banks adopt either a formal approach or a more flexible one. The distinction between the two is that the former entails the specification of an inflation target while the latter, so called "just do it", does not. Thus, it looks as if the "just do it" approach leaves more room for manoeuvre for the CB by not binding it to hit a specific inflation target. However, CB's credibility is bound to play an important role in the successful implementation of monetary policy.

3. The European Context of Monetary Policy Management

According to the Amsterdam Treaty (1997) which is now an integral part of the Treaty on the European Union[2], all the new EU members must join the Euro Area after a period that may be more or less extended. In this context, the monetary institutions in transition economies are expected to be able to cope with the constraints of the New Exchange Rate Mechanism (ERM2). The Convention for the New Exchange Rate Mechanism (September 1st, 1998) states that each euro candidate will have to define a central rate against the euro together with a standard fluctuation band of ±15% (a narrower band may be negotiated on a bilateral basis). Euro candidates should keep their currency within the New Exchange Rate Mechanism (ERM2) for at least two years before accession.[3] Given these elements, it is of interest to have a look first at the European monetary context, namely the ECB's monetary policy management.

[2] See the Treaty on European Union at the web address: www.europa.eu.int/eur-lex/en/treaties.
[3] See: "The Eurosystem and the EU enlargement process", *ECB Monthly Bulletin*, February 2000; "The ECB and the accession process", Speech by Willem F. Duisenberg, delivered at the Frankfurt European Banking Congress, November 23, 2001,

The ECB was set up in 1999 to manage monetary policy within the European Monetary Union (EMU). The ECB's main mission is "to maintain price stability" and "safeguard the value of the euro". In the medium run the ECB has to keep inflation below 2%, as measured by the HCPI. Although the ECB is also highly independent and autonomous (its range of instruments is impressive, the governments' bail-out is banned, and member country governments' political influence over the Bank is weak) it is not of the IT type. Unlike genuine IT countries and more like the Fed, the ECB shares only a moderate concern for transparency. It is not clear how the Governing Council decides on interest rates given that the internal discussions are secret. The ECB does not issue an official inflation forecast. This is not surprising, given the high technical difficulties to carry out the task of obtaining reliable forecasts. As emphasized by Svensson (1999, pp. 645), "the lack of an EMU-wide transmission mechanism from monetary policy and the corresponding unavoidable uncertainty about the transmission mechanism will […] constitute a formidable difficulty".

Early in 2004, the framework for monetary policy management within the EMU area was clearly stated by the ECB President, Jean-Claude Trichet: "In our economic analysis, we introduce all elements, all factors, that have a bearing on the situation, and […] we are not the prisoner of an equation, we are not the prisoner of a system of equations, we are not the prisoner of an algorithm which would dictate our conduct and behaviour."[4] That is, the ECB regime appears to be closer to the "just-do-it" behavior of the US Fed than to the the full-fledged IT system of the UK or Sweden central banks.

As in the US, the EMU monetary policy aims at *flexibility* so as to be able to address, in an efficient way, the various potential threats to price stability, including exceptional events (deflation, war, terrorist attacks, imports price shocks, stock market major crises, etc.).[5]

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www.ecb.int/key/01/sp011123.htm; Niels Thygesen, "The path to the euro for the enlargement countries", Speech delivered at the European Parliament on May 8, 2002, www.europarl.eu.int/comparl/econ/ pdf/emu/speeches/20020521/thygesen.pdf; "Central Europe and the euro: up for adoption", The Economist, June 1, 2002. The text of the "Conventions and Procedures for the ERM2" on September 11, 1998 is available at: www.banque-france.fr/gb/euro/bce/cpresse/2c.htm.

[4] Jean-Claude Trichet, President of the European Central Bank, Transcript of the answers at the Press Conference on January 8, 2004.

[5] The speech by Allan Greenspan, "Risk and uncertainty in monetary policy" on January 3, 2004 is a convincing plea in favor of flexibility and adaptive monetary policy management. See www.federalreserve.gov/boardocs/speeches/2004/20040103/default.htm.

The monetary policy instruments of the ECB are: minimum reserves, open market operations and standing facilities. The ECB controls liquidity in the euro-area mainly through short-term reverse-repo operations. Every week, the ECB opens a call for tenders for the Euro-zone counterparts (banks and other financial institutions). It then lends cash to banks for a one week period against collateral (high grade bonds). Banks are asked to inform the ECB about the interest rate they are prepared to pay for every euro they borrow, knowing that those that offer to pay the higher price will be first served. Every month the Governing Council of the ECB decides on the downward limit on interest rates in this bidding operation, i.e. *the minimum bid rate*.[6] According to information released by the ECB, this minimum bid rate aims at signalling the monetary policy stance to money market operators (ECB 2001).[7] Assuming a stable demand function for monetary base, a higher short term rate is tantamount to a restrictive monetary policy, and vice-versa.

The ECB interest rate rule

The actual behaviour of a central banker may be analysed by inferring from the data an empirical monetary policy rule. Such a rule describes the relationship between the main central bank instrument as the dependent variable -- in general, the target short term interest rate -- and relevant economic independent variables. Svensson (1999) distinguishes between an explicit instrument rule, where the instrument is related to predetermined variables only and an implicit instrument rule, where the instrument comes out as a function of forward looking variables.

These rules are also referred to as Taylor rules, according to the name of John Taylor who developed this methodology (Taylor, 1993). Inspired by the US experience, Taylor focused on the role played by inflation and real economic activity in monetary policy management, the two main goals of the Federal Reserve. Denoting by $E[-]$ the expectation operator and by I_t the information set at the time the interest rate is chosen (i.e., at time t), such a baseline policy rule takes the form:

[6] Until June 2001 the ECB used a fixed rate auction, where banks borrowed reserve money at a constant pre-announced interest rate. This system was highly unstable (call for bids became as high as 100 times the allotment!) and had to be abandoned.
[7] The signaling role of the minimum bid rate was emphasized by Willem Duisenberg at the *ECB Press Conference* on June 8, 2000, cf. www.ecb.int/key/00/sp000608.htm.

$$i_t^* = \bar{i} + \beta(E[\pi_{t+k}|I_t] - \bar{\pi}) + \gamma E[y_{t+q}|I_t] + AE[\Theta_{t+\ell}|I_t]$$

where i_t^* stands for the *target* interest rate, π_{t+k} is the inflation rate *k* periods ahead, $\bar{\pi}$ is the target inflation rate, y_{t+q} is the average output gap *q* periods ahead; Θ is a vector of variables other than inflation and the output gap (at time $t+\ell$) and *A* is the respective vector of coefficients. $\bar{i}$ can be interpreted as the desired (target) nominal interest rate, to be obtained when both inflation and output are at their target level. β and γ are given parameters. In so called contemporaneous rules, *k*, *q* and *l* are set to zero; in "forward looking rules", some of them are positive.

Several economists pointed to the important role played by the β coefficient on the stability of the macroeconomic system (inter alia, Kerr and King, 1996; Bernanke and Woodford, 1997; Clarida et al., 2000). They worked out simple macroeconomic dynamic models, with three main equations: an IS curve, linking the output gap to real interest rates; a Phillips curve, whereby the inflation rate is positively related to the output gap; and a monetary policy rule. When a shock pushes inflation above the target, the Central Bank increases its interest rates according to the policy rule. If $\beta<1$, the increase is not strong enough to bring about a higher real interest rate, demand is stimulated, and, *via* the Phillips curve mechanism, inflation is further enhanced. To the contrary, if $\beta>1$, the strong response of the Central Bank brings about an increase in the real interest rate, which tempers demand and inflation.

The fact that the ECB has such a short history makes difficult but not impossible the econometric estimation of an interest rate rule *à la* Taylor. The better understanding the ECB objectives should guide the implementation of goals and policies in the euro candidate countries. Table 3.1 below summarizes the main findings. All these studies point to the sensitivity of the ECB to the real activity; if the actual output goes below its trend (or the output growth rate falls below the target), the Bank will reduce interest rates and vice-versa.

In most these studies, the ECB will increase interest rates if the inflation exceeds the 2% target, but it is not clear whether the Banks's action is stabilizing or not; some economists found that the β coefficient is bigger then one, some others found a β lower than one. As a comparison, all studies about the Fed in the nineties show that the American central bank reacts very energetically to excessive inflation (β larger than one).

STUDY	TYPE OF RULE	PERIOD	β	γ	REMARKS
Gerdesmeyer & Roffia, 2003	Contemporaneous	99.01-02.01	0.45	0.30	
Ullrich, 2003	Contemporaneous	99.01-02.08	0.25	0.63	0.08 coefficient of the real ex. rate
Fourçans & Vranceanu, 2004	Contemporaneous	99.04-03.10	0.43	0.26(a)	0.08 coefficient on the nominal exchange rate
	Forward (+6)	99.01-03.10	2.8	0.19(a)	
Surico, 2003	Contemporaneous	97.07-02.10	1.93	0.20	Quadratic term in inflation
Sauer & Sturm, 2003	Contemporaneous	99.01-03.03	0.03	0.76	
	Contemporaneous	99.01-03.03	0.95	0.50(a)	

(a) real activity proxied as the industrial output growth gap.

Table 3.1. A review of main Taylor rules estimates for the EMU

In the study by Ullrich (2003) the ECB appears to react to real appreciation of the euro by lowering the interest rate; this reaction would suggest that the real activity goal is more important than would indicate the coefficient on output gap alone. In the study by Fourçans and Vranceanu (2004), nominal appreciation pushes the ECB to reduce interest rates; this would suggest that the Bank takes into account the depressing impact on prices that nominal appreciation would entail, and accommodate its monetary policy accordingly. Most empirical studies on the ECB show that, despites its verbal commitment to the reference value in the money stock growth rate, the Bank pays little attention to this indicator.

To sum up, from these studies, it might be inferred that the ECB interest rate rule is not very different from the Fed's policy. It is characterized by some weight set on real activity (a "leaning against the wind" policy) and some weight set on inflation (but is this weight strong enough?). Some studies also point that the ECB is indeed "not indifferent" to the exchange rate stability, which appears to be -- in some of the estimated rules -- a direct policy goal.

It must be emphasized that these simple linear estimates do no allow to infer the ultimate goal of the Central Banker. As Svensson (1997, 1998) has shown, a linear reaction function, including on the right hand side other variables than inflation (output gap, exchange rate) may be

characteristic of a forward looking policymaker concerned with inflation only; it may also be consistent with a policymaker concerned with price and output stability.

Arguably, the "best international practice" IT is pursued by the Bank of England (BofE) and Riksbank, the Bank of Sweden. The design of procedures implemented by the two banks has been come to be regarded as a benchmark in the way monetary policy under IT should be conducted.

The Bank of England (BofE) has introduced the IT regime in 1992. In January 2004, the UK replaced the RPIX price index (which excludes mortgage payments) with the HCPI (which includes them) and which is the official index of the ECB. The Bank aims at holding the inflation rate within a narrow band around the 2% central value. Because monetary policy works its effect with several lags, under IT the central bank takes a forward looking stance over inflation developments; more in detail, the BofE focuses on inflation developments over a two year period. In order to implement this policy, it makes use of forecasts obtained from various models. Although for the forecasting process there is a so-called core macroeconometric model of the UK economy, the BofE also uses the forecasts obtained from several other smaller models. These are intended to capture and explain some phenomena that are rather difficult to assess by simply using the core model. For example they could offer a better understanding of the recent past or, sometimes, they could evaluate new scenarious. They are also used to test the appropriateness of assumptions made about the driving processes used in the core model. The models' output are a useful tool because they facilitate a better comprehension of how the economy works allowing for empirical quantification and thus helping in understanding the monetary policy transmission mechanism. Aided by the forecast output of these models, the BofE's Monetary Policy Committee (MPC) makes a judgement about the future potential developments of inflation and output growth. Every month, the BofE publishes a two-year ahead forecast for the annual CPI and RPIX inflation and four-quarter growth rate of GDP, under the assumption of constant short-term UK interest rates, in the form of a fan-charts. The forecast process at the BofE takes several steps. First, there is a meeting between the MPC and the BofE staff aimed at establishing the key assumptions together with a risk assessment. These are then incorporated into the BofE's economic models by the forecasting team in order to obtain a draft forecast. The draft forecast is analysed by the MPC which may require changes subject to revised

assumptions and new information. Finally the forecast is fine-tuned by the MPC in response to the latest economic developments. All monetary policy decisions are interpreted and motivated in the light of these forecasts. The basic principle is that a deviation of the forecast from target requires a current intervention of the Bank: when the forecast exceeds the target, monetary policy is tightened and vice-versa.

Recently (see next section), the central banks from Czech Republic, Hungary, and Poland have also moved towards IT. However, there is still some way to go until the performance of IT in these countries will be close to the one in more advanced economies.

Standing out from the group of inflation targeters are the Baltic countries. Notably, the central banks of Estonia, Latvia and Lithuania have all adopted some sort of a currency board arrangements. With the three countries committed to join the EMU as soon as possible it looks unlikely that they will change their current monetary policy framework before adopting the euro.

4. Inflation Targeting in Transition Economies, Issues and Experience

Inflation targeting in transition economies has been a more challenging task than in developed economies. As experience with IT in transition economies shows, the central banks in these countries often missed inflation targets by a sensible amount. Jonas and Mishkin (2003) look at the potential difficulties and evaluate the outcome in the three East European countries, the Czech Republic, Hungary and Poland that claim to use the IT system. They conclude that although the progress with disinflation has been good, the relative high level of uncertainty in these countries makes it relatively difficult to predict inflation over the medium term – as required by the IT approach.

This is not a minor shortcoming. In the developed countries, adoption of IT implies that the central bank dispose of the technical ability to:

(1) have a reliable conditional forecast inflation (6-8 quarters ahead); and
(2) know how to adapt its instruments so as to bring the forecast close to the target.

All the benefits which derive from IT in terms of accountability and credibility stem from these conditions. Obtaining a reliable conditional forecast is a very difficult task – and the ECB itself did not take this challenge! What if the forecast is wrong? Figure 2.1 proves the point. If the *true* forecast falls below the target, the policymaker would tighten monetary policy when he should loosen it. The relationship between the instruments is in general assumed to be known but this relationship changes continuously in developing economies.

Given the fact that the risks of getting wrong forecasts – and thus missing inflation targets - in a transition economy are quite large, the central bank's credibility may be adversely affected by adoption of IT. By adopting a rigid framework for monetary policy management in the context where the criteria for the well functioning of this framework are not fulfilled, the central bank's credibility can only be damaged.

Furthermore, as inflation developments in recent years show, inflation in almost all Central and Eastern European countries has been following a downward trend (from the high levels of inflation experienced after 1990) – irrespective of the choice of monetary arrangements and regimes the central banks these countries have employed. This evidence goes against those who advocate that it was the adoption of IT in some transition economies that favoured a sustainable disinflation process in these countries. In general, it was the implementation of sensible domestic fiscal and monetary policies in transition economies that led to a low inflation environment. If these policies continue to be pursued responsibly there are no reasons to think why the disinflation path could not be maintained, even in the absence of a genuine IT regime.

In a recent paper Stone (2003) shows that, although a series of developing countries pretend to practice IT, in reality they are not able to meet their inflation targets. The paramount policy issue in these countries is then whether the central bank should pre-commit itself to a single nominal anchor – namely inflation. The same question is posed for the particular case of transition economies. Is the formal IT regime, as claimed to be implemented by the central banks in transition economies, best suited given the current economic circumstances? And if it is not, what would be the alternative? To answer the first question one would have to look at the particular issues that might obstruct the implementation of the IT regime in transition economies. These issues resemble remarkable similarities in most of the transition economies. Here we look

at the preliminary IT experience in three transition countries, the Czech Republic, Hungary and Poland, namely because of the existing track record – albeit small – these countries have in this respect. A comprehensive analysis of the economic developments that led to the introduction of IT in these countries is beyond the scope of this paper[8]. However, for evaluation purposes a brief overlook on the IT experience in these countries is necessary.

Officially, Hungary launched inflation targeting in mid-2001. The first target band was +/-1% centred around a parity of 7%. For the end of 2004 the announced target band is 3.5% +/- 1%. However, the target looks increasingly likely to be missed as the latest NBH inflation forecast for end-2004 suggests a value of 6.5%. The inflation rate has been following an upward trend from the end of 2003, when it was running as high as 5.7%, prompting some critics to point to inconsistencies between NBH's monetary and exchange rate policies.[9]

The Czech Republic adopted the IT framework in December 1997 and had an initial band of 5.5-6.5%. and a one-year time horizon. Initially, the Czech National Bank (CNB) chose to target core inflation but moved to CPI in December 2001. Starting with January 2002 the CNB adopted a 4-year inflation forecast period in which targeted inflation is expected to fall gradually within a band from 3-5% to 2-4% by the end of December 2005.

In Poland the National Bank of Poland (NBP) set a short-term inflation target within the 8-8.5% range in June 1998. Subsequently different targets were set at the end of each year. At the time of announcement to implement inflation targeting the NBP was still maintaining an exchange rate band. This was widened gradually before allowing the zloty to float freely in April 2000. For the end-2005 the target inflation band is 2.5% +/- 1% but this looks likely to be overshoot. The graphs in the Appendix 1 show the behaviour of inflation and the inflation targets in the Czech Republic, Hungary and Poland.

From the graphs in Appendix 1 it can be easily noticed that central banks in all three countries have had limited success in hitting inflation targets. This is not surprising given the challenges IT poses in transition economies. Firstly, the source of the shocks that hit these economies is rather uncertain. A central bank would adopt a different course for monetary policy if it knew that the economy was subjected to a demand shock then in the case of a supply shock.

[8] For this see Jonas and Mishkin (2003).
[9] See: "The Balcerowicz Effect", *The Economist*, January 31, 2004.

The difficulty to disentangle the source of the shocks stems from the fact that the effects of structural changes these economies undergo overlap with those brought about by external causes, such as a shock to terms of trade for example. And this problem is going to persist in the near future as broad structural reform is still set to continue for some time in these countries. A solution to this problem could be provided by model simulations. However, the design of econometric models that would be able to produce a reasonable inflation forecast in any of the three countries has proved to be rather challenging so far.

The NBH has been using initially the global model (NIGEM) of the National Institute of Economic and Social Research (NIESR). A Hungarian block was developed within the NIGEM which was then used for scenario analysis. More recently the NBH has developed a quarterly model, called NEM, which is used both for policy simulations and forecasting. Similarly, the CNB has been also using a small quarterly model for some time. There have been several attempts to build models for forecasting inflation at the NBP (see, for example[10] Kokoszczynski et al., 2002 or Kllos, 2002). But the conditional forecast of these models seems to have been falling short of expectations so far – as suggested by an ex-post comparison between realised end-year inflation against targets. This does not come as a surprise as the likelihood that these models are mis-specified is rather high. Additionally, some of the estimated coefficients in the models equations could be biased. Kemme and Gavin (2004) have found that the forecasting processes in these countries yield superior results if coefficients obtained by a panel data estimation of the 15-EU countries are used instead. This seems to suggest that there is already a relative high level of economic integration between these three countries and the 15 countries that formed the EU before 1 May 2004.

Another interesting remark pertains to inflation volatility. This – as measured by a rolling 12-month standard deviation – has become larger in all three countries (see Appendix 2). Although this observation is supported by findings in other papers[11] the question that arises is whether such volatility is desirable.

Secondly, is the issue of multiple objectives. It is hard to believe that the authorities in transition economies would place a much lower emphasis on other macroeconomic variables

[10] We are greatful to Marek Gruszczynski for providing us the links to those papers.
[11] Levin et al. (2004) find that, while most of their developing countries in their sample succeeded in reducing the mean of inflation, the volatility of inflation remained quite high.

such as economic growth or employment compared to inflation. This is not to say that central bankers care only about inflation, in other words they are "inflation nutters" in Mervin King's terminology. But the weights assigned to economic growth or employment for instance are bound to be higher in practice than the central bank would acknowledge. This is because, ultimately, higher unemployment could cause public dissatisfaction with the government economic policies which in turn may lead to macroeconomic instability. Already Socialist governments in the Czech Republic, Hungary and Poland are losing support as they cut welfare and state jobs to meet EU requirements on deficits and debt. The prime ministers in all three countries bowed to public pressure and resigned since their countries joined the EU. Also coalitions led by Socialists in the Czech Republic, Hungary and Poland suffered defeat in June 2004 European Parliament elections. This could add up to the pressure the central banks in these countries already face to pay more attention to economic growth.

Moreover, there is a potential unavoidable conflict caused by multiple objectives that lies ahead for all new EU members. All countries that intend to join the EMU (and all new EU members have to do so sooner or latter) are required first to spend a period of minimum two years in the ERM II. This means that the central bank will have to maintain a +/-15% exchange rate band around some predetermined central parity. But preserving the value of domestic currency against the euro within the band while, at the same time, targeting inflation could cause potential conflicts for the conduct of monetary policy. The experience of the NBH is illustrative in this respect. In 2003, in the aftermath of a speculative attack on the forint, the NBH was forced to shift the band the forint was trading in at that time. Such actions are bound to affect the credibility of monetary authorities.

Thirdly, fiscal policy considerations play an important role in the evolution of inflation in transition economies. Although the design and implementation of monetary policy in all three countries lies ultimately with the central banks, other crucial elements of policy credibility such as the fiscal position play a decisive influence on inflation expectations. The pressure on budget deficits is likely to grow in the years to come as the EU accession costs will have to be added to the costs of reforming social security systems. The latest IMF country reports for all three countries suggest that fiscal policies are on an unsustainable paths. Moreover, the level of public

debt in Hungary and Poland is already close to the Maastricht limit of 60% of GDP. As a consequence, in 2004 both Standard and Poor's and Fitch rating agencies downgraded Poland's domestic debt. Such actions can affect the credibility of fiscal policies and raise inflation expectations. For example, the two criteria used by Stone (2003) to measure policy credibility in a range of developing countries were the actual rate of inflation and the Standard and Poor's long-term currency government debt ratings. On both counts the situation seems to get actually worse in Poland. In Hungary policy inconsistencies have weakened policy credibility. This could be damaged further if steps are not taken to achieve fiscal consolidation and contain the current account deficit (see Appendix 3).

In retrospective it looks as if the IT experience in all three countries has had limited success so far. The question that arises is then what should be the alternative. A simple answer would be to follow the ECB's approach. Many empirical studies have shown that the ECB is not indifferent either to fluctuations in economic activity or the exchange rate. It seems that for a central bank, "flexibility" is an asset at least as important as "credibility".

An ECB-like system is likely to be a more suitable regime. Under such an arrangement, the policymaker focuses on price stability too, but monetary policy management builds on the "just-do-it" principle. For a small, still fragile economies, flexibility does not clash with credibility, to the contrary, both back each other.

The distinction between a flexible pursuit of an inflation target and a genuine IT regime is not merely semantic. The latter impose stringent requirements on the central bank, and may be a very efficient device in the context of the developed economies; to the contrary, pretending to behave like these countries, while in reality retaining a large degree of flexibility is no better than communicating honestly on the "imperfect IT" system that is actually implemented.

The recent experience with IT in the Czech Republic, Hungary and Poland poses the question whether a move towards IT would be beneficial for other countries that intend to join the EU in the near future. The answer will depend, of course, on the particular economic conditions existent in each country. But there are a few remarks that are worth mentioned here. One of them relates to the level of euro(dollar)isation. Countries that had high levels of inflation in the past tend to be more euro(dollar)ised as the public sought to protect their savings in a more

stable currency. In Romania, for example, cca. 35% of M2 is still in foreign currency, mostly euros and US dollars. Croatia is an example of a highly euroised country, almost 70% of savings here are denominated in foreign currency. A typical issue in such countries is the indexation of financial contracts either to the US dollar or euro. The euro(dollar)isation is bound to hamper the implementation process of IT here simply because the central banks have limited control over their money supply. A particular case is represented by the countries that adopted a currency board, like the Baltic countries (which are already EU members) or Bulgaria, for example. However, unless some significant adverse shock that could make them abandon their current exchange rate arrangements happens, it is unlikely that these countries will change their monetary policy framework before adopting the euro.

Large interest rate differentials are another potential source of conflict with an IT regime. In the absence of capital account restrictions the domestic currency is bound to appreciate as foreign capital inflows move in to take advantage of higher returns. This should lead to an appreciation of domestic currency and put a downward pressure on the interest rates. But easier access to credit by domestic residents, which is in high demand in accession countries, could be a cause for a raise in inflation expectations and it may adversely affect central bank's efforts to target inflation.

Also, a stronger currency will put additional pressure on the current account deficits. In Romania and Bulgaria, for instance, these are already large and growing. Under such a scenario the adoption of IT will leave even less room for manoeuvre for fiscal authorities if the targets for inflation are not set in relation to government demands for fiscal consolidation. It is a well documented fact that government's budgets in accession countries tend to be more under strain as EU accession costs add up to other expenses incurred, such as those related to pensions or health care reforms.

It is therefore essential that a central bank should not adopt a policy regime only for communication purposes or because it follows some policy fashion trends. A central bank should be concerned first above all about credibility. And credibility will emerge if, over a long period, agreed targets are not missed – whatever they may be.

5. Conclusions

This paper examines the inflation targeting regime in the context of transition economies. However, the success of such a regime depends largely on the degree to which certain general requirements are met. As experience with IT in the Czech Republic, Hungary and Poland has shown so far these pre-conditions for a formal/strict implementation of IT are simply not in place yet. The uncertainty surrounding the conditional forecasts, the inherent existence of multiple objectives for monetary policy together with other elements of policy credibility, such as fiscal policy, cast doubts that a strict IT regime can be adopted succesfully in transition economies at the moment. The pre-conditions for a formal IT impose a more rigid operating framework for monetary policy and leave less room for manœuvre for a central bank. By consistently missing inflation targets a central bank will damage, sooner or latter, its credibility and this fact could have long-lasting consequences. The alternative for these central banks is to adopt an ECB-like approach. This would not only help preserve their hard earned credibility achieved so far while alowing them the much desired flexibility in the implementation of monetary policy. But, since all these countries will join the EMU sooner or later, it also makes more sense for an accession country to adopt a monetary policy practice which resembles closely the one practiced by the ECB.

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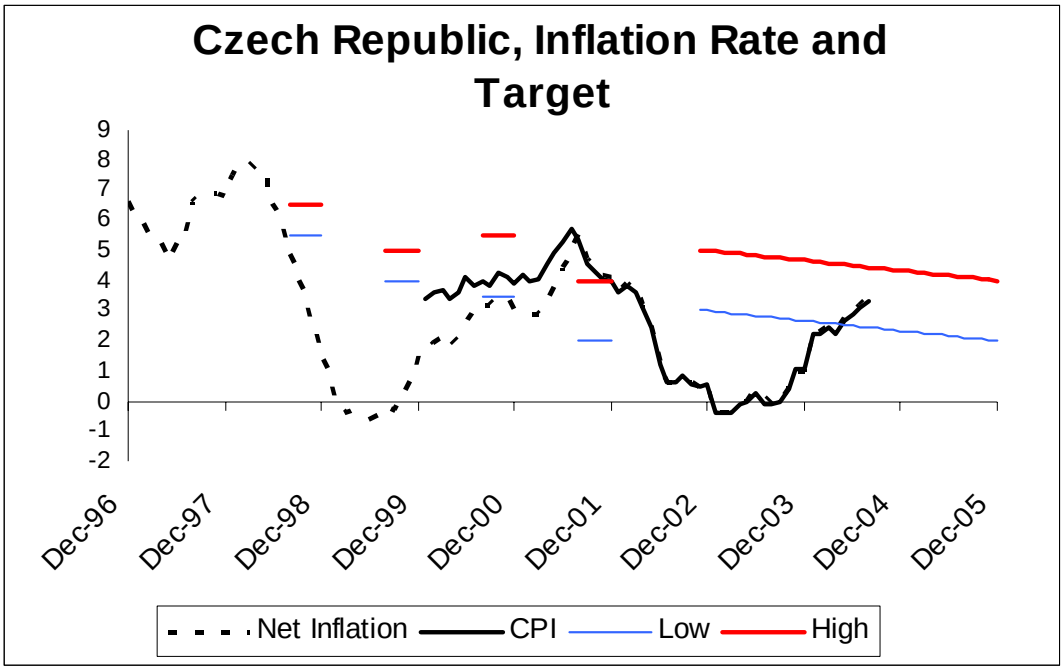
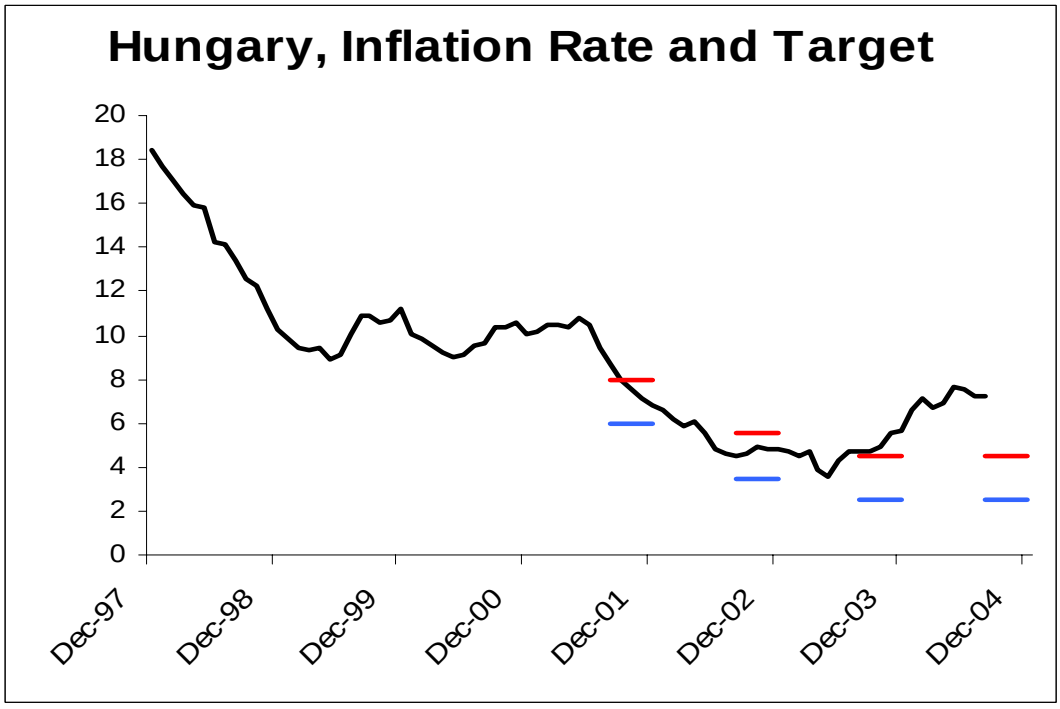
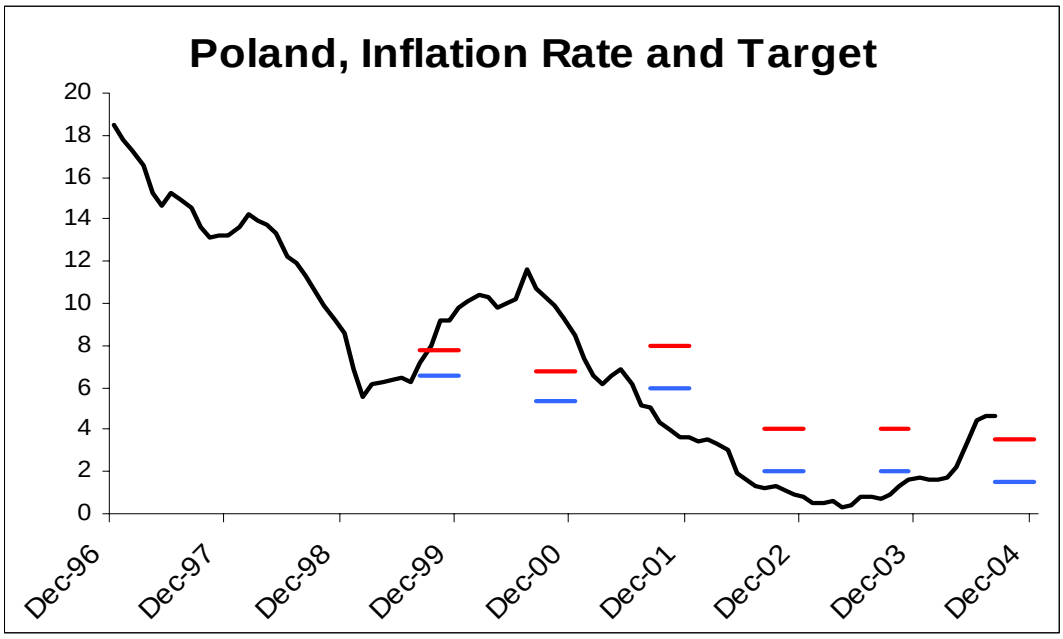
Appendix 1. Inflation and Targets in the Czech Republic, Hungary and Poland

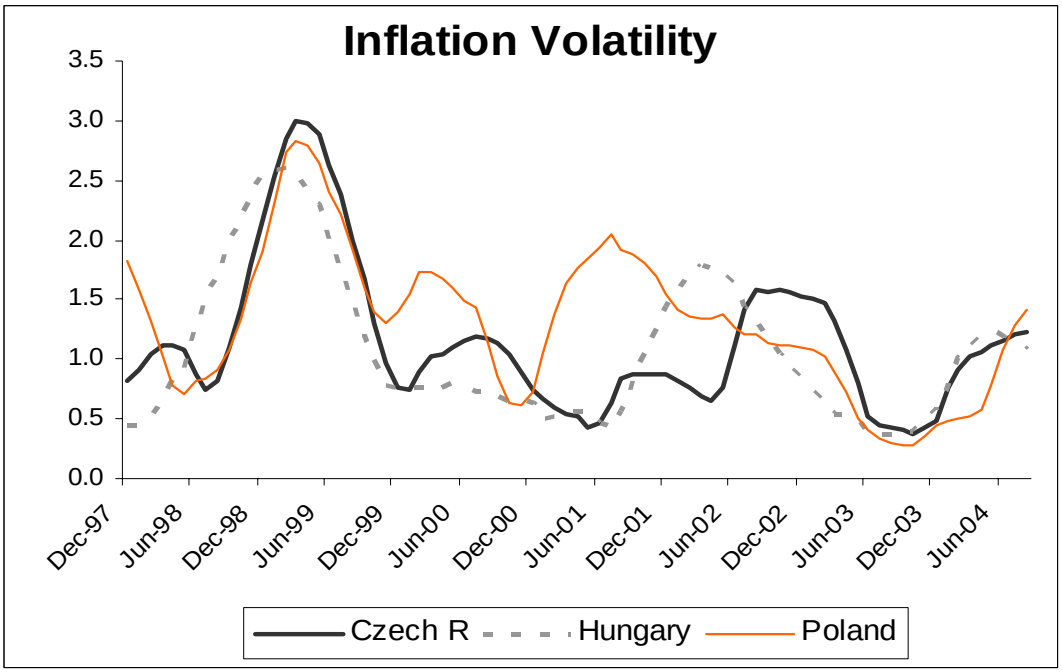




Appendix 1 (cont.)



Appendix 2. Inflation Volatility in Selected Countries.



Inflation volatility is computed as a rolling 12-month average of standard deviation.

Appendix 3. Selected Macroeconomic Variables

Current Account(% of GDP)	Czech Republic	Hungary	Poland
1999		-5.0	-7.6
2000		-6.2	-6.0
2001	-5.4	-3.3	-2.9
2002	-5.6	-4.1	-2.6
2003	-6.2	-5.5	-1.9
2004*	-5.5	-5.3	-2.3

* estimated

Public debt (% of GDP)	Czech Republic	Hungary	Poland
1999		61	40.5
2000		55.4	36.9
2001	22.9	53.5	40.2
2002	25.5	57.1	45.1
2003	27.9	59.1	50.1
2004*	31.3	59.5	53.2

* estimated

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